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United States  
Department of  
Agriculture

Soil  
Conservation  
Service

Spokane,  
Washington



# Washington Water Supply Outlook

MAY 1, 1987



# Foreword

## How Forecasts Are Made

Most of the annual streamflow in the Western United States originates as snowfall. This snowfall accumulates high in the mountains during winter and early spring. As the snowpack accumulates, hydrologists estimate the runoff that will occur when it melts. Predictions are based on careful measurements of snow water equivalent at selected index points. Precipitation, temperature, soil moisture and antecedent streamflow data are viewed in conjunction with snowpack data to prepare runoff forecasts. This report presents a comprehensive picture of water supply outlook conditions for areas dependent upon surface runoff. It includes selected streamflow forecasts, summarized snowpack and precipitation data, reservoir storage data and narratives describing current conditions.

Streamflow forecasts are cooperatively generated by Soil Conservation Service and National Weather Service hydrologists. Forecasts become more accurate as more data affecting runoff becomes known. For this reason, forecasts are issued that reflect three future precipitation conditions — Below Normal, Average, and Above Normal. These forecasts are termed reasonable minimum, most probable, and reasonable maximum. Actual streamflow can be expected to fall between the lower and upper forecast values eight out of ten years.

Snowpack data are obtained by using a combination of manual and automated measurement methods. Manual readings of snow depth and water equivalent are taken at locations called snow courses on a monthly or semi-monthly schedule during the winter. In addition, snow water equivalent, precipitation, temperature, and other parameters are monitored on a daily basis and transmitted via radio telemetry to central data collection facilities. Both monthly and daily data are used to project snowmelt runoff.

## For More Information

Copies of Monthly Water Supply Outlook Reports and other reports may be obtained from the states listed below. Because of the limited space, snow survey measurements are not published in monthly reports. An annual snow survey data summary is published by the Soil Conservation Service for each of the western states. Historical snow survey data may be obtained at those same offices.

| STATE      | ADDRESS   |
|------------|---|
| Alaska     | 201 East 9th Ave., Suite 300, Anchorage, AK 99501-3687                  |
| Arizona    | 201 East Indianola, Suite 200, Phoenix, AZ 85012                        |
| Colorado   | 2490 West 26th Ave., Denver, CO 80211                                   |
| New Mexico | 517 Gold Ave. S.W., Room 3301, Albuquerque, NM 97102                    |
| Idaho      | 304 North 8th Street, Room 345, Boise, ID 83702                         |
| Montana    | 10 East Babcock, Room 443, Federal Building, Bozeman, MT 59715          |
| Nevada     | 1201 Terminal Way, Room 219, Reno, NV 89502                             |
| Oregon     | 1220 Southwest 3rd Ave., Room 1640, Portland, OR 97208                  |
| Utah       | 4402 Federal Building, 125 South State Street, Salt Lake City, UT 84147 |
| Washington | 360 U.S. Court House, Spokane, WA 99201                                 |
| Wyoming    | Federal Building, 100 East "B" Street, Casper, WY 82601                 |

In addition to state reports, a Water Supply Outlook for the Western United States is published by the Soil Conservation Service and National Weather Service monthly, January through May. Reports may be obtained from the Soil Conservation Service, West National Technical Center, 511 Northwest Broadway, Room 547, Portland, OR 97209.

Published by other agencies:

Water Supply Outlook Reports prepared by other agencies include: California — Snow Survey Branch, California Department of Water Resources, P.O. Box 388, Sacramento, CA 95802; British Columbia — The Ministry of Environment, Water Investigations Branch, Parliament Buildings, Victoria, British Columbia, V8V 1X5; Yukon Territory — Department of Indian and Northern Affairs, Northern Operations Branch, 200 Range Road, Whitehorse, Yukon Territory, Y1A 3V1; Alberta, Environment Technical Services Division, 9820 106th St., Edmonton, Alberta T5K 2J6.

# **Washington Water Supply Outlook**

and

**Federal — State — Private  
Cooperative Snow Surveys**

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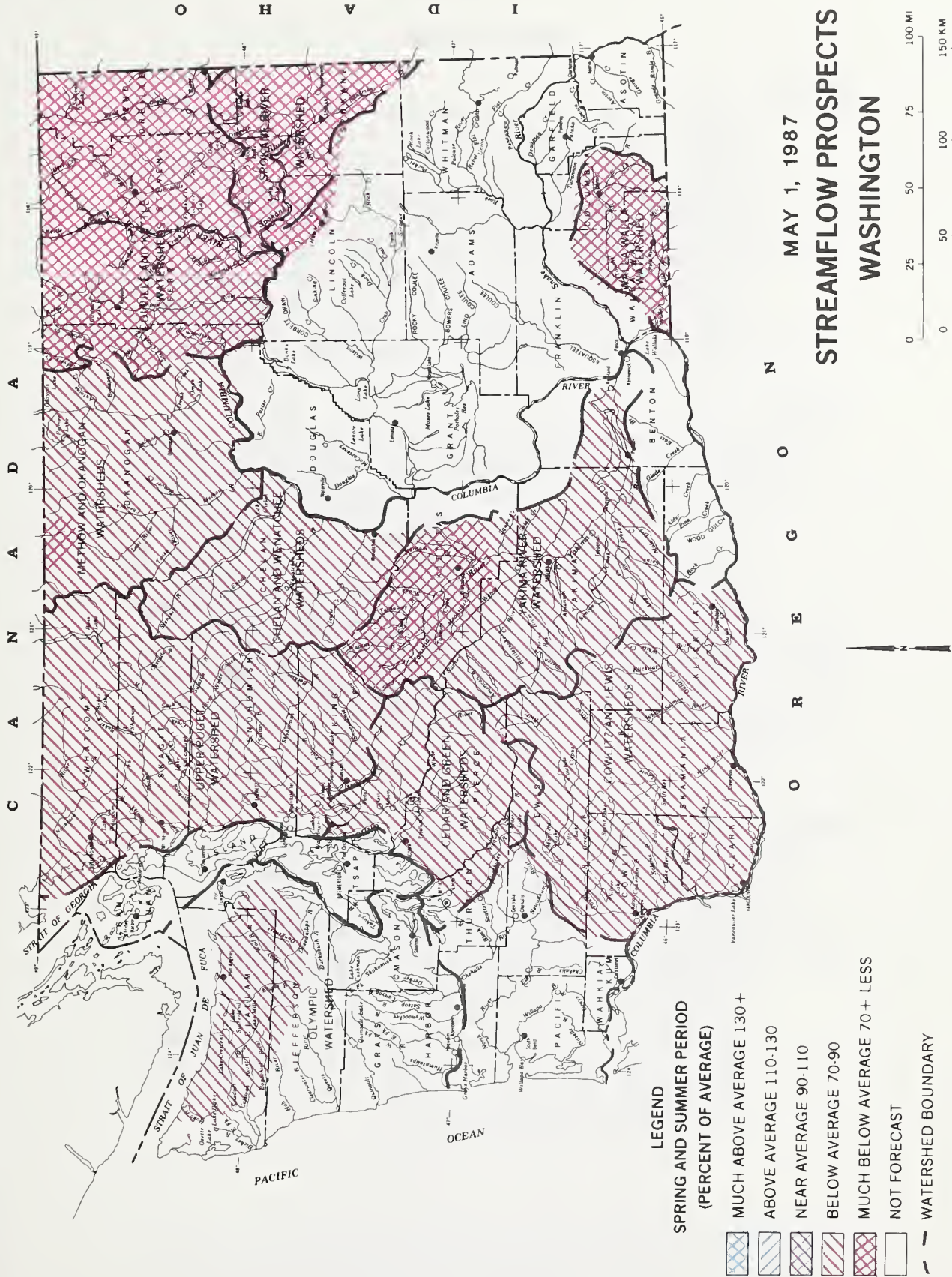
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**MAY 1, 1987**

**STREAMFLOW PROSPECTS**

**WASHINGTON**



SOURCE: Data compiled by SCS  
Field Personnel.

## GENERAL OUTLOOK

### SUMMARY:

1987 will go down as a poor water year in Washington State. The snowpack, except in isolated areas, is gone. Stream runoff has for the most part occurred. Above normal temperature continued during April. Reservoir storage, while somewhat improved, remains below normal at the major irrigation projects throughout the state. Washington's May water supply forecasts indicate below normal runoff for 1987 in eastern Washington. Snow cover and precipitation continue to be below average. April streamflows were above average except in Southern Washington.

### SNOWPACK:

The snowpack has disappeared, or has been low since early winter, from below an elevation of about 4200 feet. Eight of 37 SNOTEL sites are bare of snow. Eastern Washington continues to be much below average with the Spokane Basin at 47% of normal, and the Colville-Pend Oreille River 51% of average. The eastern slopes of the Cascade Mountains have decreased from last month with the Wenatchee-Chelan Basin at 76%, down from 88% last month and the Yakima Basin at 59%, down from 79%. On the western slopes of the Cascades the Lewis and Cowlitz basins are at 59% and the Skagit and Olympic at 74% of normal.

### PRECIPITATION:

Precipitation in April was normal along the western slope of the Cascade Mountains; below average along the eastern slope of the Cascades and much below normal for the rest of Eastern Washington. April precipitation values from SNOTEL sites indicate a water year value near 87% of average for the high mountain areas of Washington. National Weather Service data for Washington showed the Pend Oreille Basin with 76% of normal and the Spokane with 68%; both on the low side. The Yakima at 102% and the White-Green Basin with 102%, had the highest percentage of precipitation.



#### RESERVOIRS:

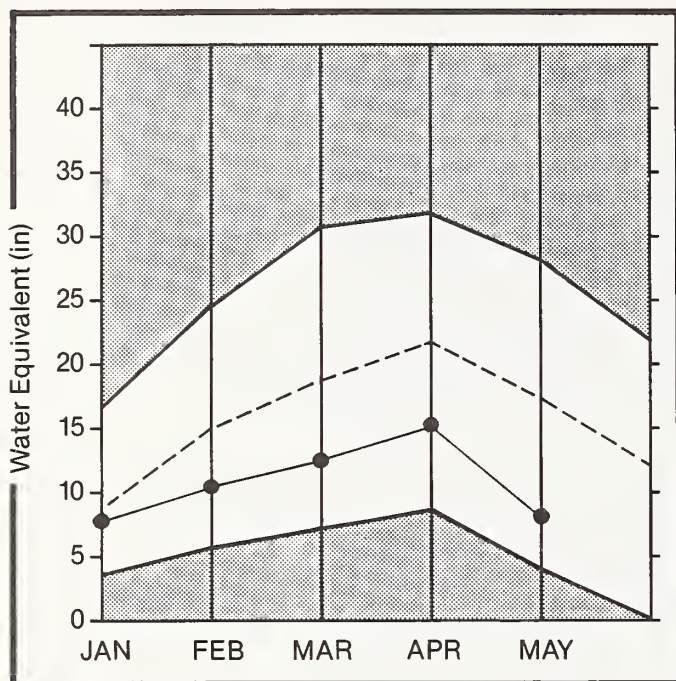
Irrigators dependent on reservoir storage will likely have near normal supply through early summer. May 1 reservoir storage in the Yakima Basin was 727,800 acre feet is 93% of average, up from 71% last month. Other major irrigation reservoir storage remains good in Washington for April 1, with Roosevelt at 328% of normal and being held high due to low summer runoff forecasts. Banks Lake is at 159% and the Okanogan reservoirs at 102% of average. The power reservoirs contain the following: Coeur d' Alene Lake 281,200 acre feet or 97% of capacity, Chelan Lake 213,100 acre feet at 32% of capacity and Ross Lake at 773,200 acre feet or 55% of capacity.

#### STREAMFLOW:

April streamflows varied widely with a minimum flow of 38% of normal from the Walla Walla River and the maximum of 178% from the Similkameen River. On the west side of the Cascade Mountains, runoff from the Chehalis was 55%, the Skagit 109% and the Skykomish 121% of normal. The eastern slope of the Cascades runoff remained high with the Yakima at 113%, Wenatchee at 145%, and the Okanogan at 109% of average. The Columbia River was 121% at the International Border. In Eastern Washington, the Spokane streamflow was 83% of normal and the Pend Oreille 110%. Above normal runoff over much of Washington during March and April has resulted in reduced forecasted summer streamflows in most state streams and rivers. Forecasts vary from 51% in the Spokane River to 81% in the Skagit River.

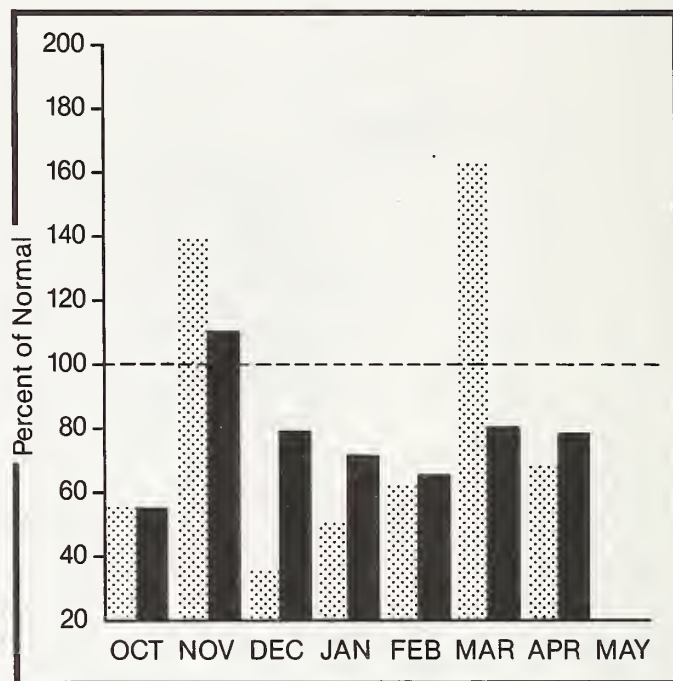
# SPOKANE

**Mountain snowpack\* (inches)**





\*Based on selected stations

**Precipitation\* (percent of normal)**



\*Based on selected stations

Maximum  Average   
Minimum  Current 

Monthly precipitation  Year to date precipitation 

## SPOKANE RIVER BASIN

### WATER SUPPLY OUTLOOK:

Forecasted summer runoff is 51% of normal. This forecast is based upon a snowpack that is 47% of average and a water year to date precipitation value of 79% of normal. Precipitation for April was 68% of average. April streamflow on the Spokane River was 83% of average at Spokane. Storage in Coeur d'Alene Lake was 281,200 acre feet compared to 289,300 last year; average storage in Cd'A for April 1 is 317,200 acre feet. Maximum measured snowpack occurred at the Lost Lake snow course with 77 inches of snow and 35.5 inches of water content. Temperatures in Spokane for April were 5 degrees above normal.

For more information contact your local Soil Conservation Service office.

# SPOKANE RIVER BASIN

## STREAMFLOW FORECASTS

| FORECAST POINT        | FORECAST PERIOD | 25 YR. AVG.<br>(1000AF) | MOST PROBABLE<br>(1000AF) | MOST PROBABLE<br>(% AVG.) | REAS. MAX.<br>(1000AF) | REAS. MAX.<br>(% AVG.) | REAS. MIN.<br>(1000AF) | REAS. MIN.<br>(% AVG.) |
|-----------------------|-----------------|-------------------------|---------------------------|---------------------------|------------------------|------------------------|------------------------|------------------------|
| SPOKANE at Post Falls | MAY-SEP         | 1956.0                  | 1010.0                    | 52                        | 1440.0                 | 74                     | 580.0                  | 30                     |
|                       | MAY-JUL         | 1858.0                  | 950.0                     | 51                        | 1360.0                 | 73                     | 540.0                  | 29                     |
| SPOKANE at Long Lake  | MAY-JUL         | 2097.0                  | 1070.0                    | 51                        | 1530.0                 | 73                     | 610.0                  | 29                     |

| RESERVOIR STORAGE |                  | (1000AF)              |           |       | WATERSHED SNOWPACK ANALYSIS |                      |                   |         |
|-------------------|------------------|-----------------------|-----------|-------|-----------------------------|----------------------|-------------------|---------|
| RESERVOIR         | USEABLE CAPACITY | ** USEABLE STORAGE ** |           |       | WATERSHED                   | NO. COURSES<br>AVG'D | THIS YEAR AS % OF |         |
|                   |                  | THIS YEAR             | LAST YEAR | AVG.  |                             |                      | LAST YR.          | AVERAGE |
| COEUR D'ALENE     | 291.2            | 281.2                 | 289.3     | 317.2 | Spokane River               | 11                   | 70                | 33      |

1 - Reas. max. and reas. min. forecasts are for 5% and 95% exceedance levels and also (2) below.

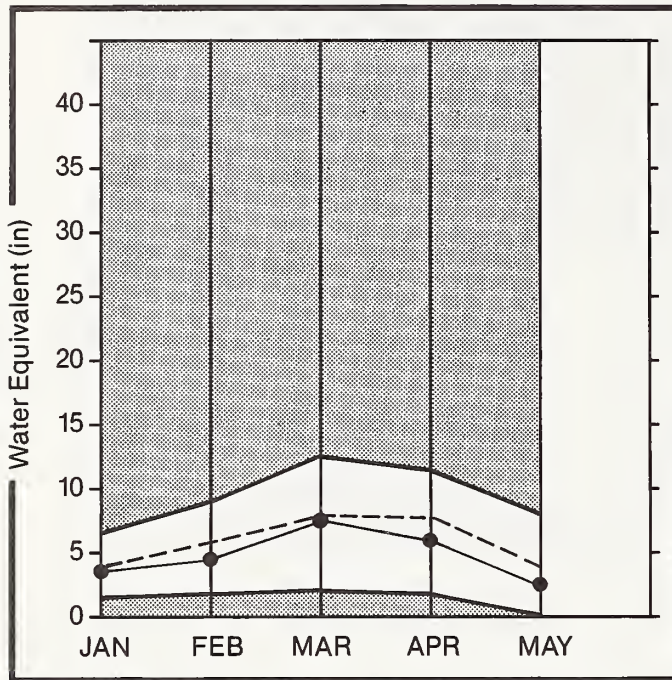
2 - Corrected for upstream diversions or changes in reservoir storage.

The average is computed for the 1961-85 base period.



# COLVILLE AND PEND OREILLE

**Mountain snowpack\*** (inches)



\*Based on selected stations

Maximum



Average



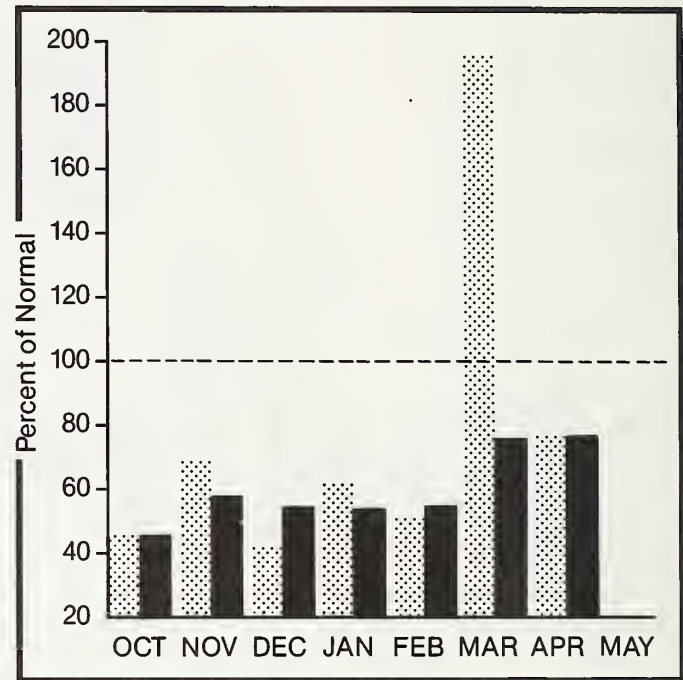
Minimum



Current



**Precipitation\*** (percent of normal)



\*Based on selected stations

Monthly precipitation



Year to date precipitation



## COLVILLE - PEND OREILLE RIVER BASINS

### WATER SUPPLY OUTLOOK:

Streamflows for the Pend Oreille River are Forecasted to be 58% of normal for this summer. Other forecasts are the Kettle River 60%, and the Colville River 59% of normal for the summer runoff period. Snow cover basin-wide is 73% of average. Maximum snowpack measurement for the basin was at Schweitzer Ridge with 80 inches of snow and 43 inches of water. Precipitation during April was 76% of average bringing the water year to date to 76% of normal. Streamflows for April were 110% of average on the Pend Oreille River, 109% on the Kettle River and 121% on the Columbia River at the International Border.

For more information contact your local Soil Conservation Service office.



# COLVILLE - PEND OREILLE RIVER BASINS

## STREAMFLOW FORECASTS

| FORECAST POINT                     | FORECAST PERIOD | 25 YR. AVG.<br>(1000AF) | MOST PROBABLE<br>(1000AF) | MOST PROBABLE<br>(% AVG.) | REAS. MAX.<br>(1000AF) | REAS. MAX.<br>(% AVG.) | REAS. MIN.<br>(1000AF) | REAS. MIN.<br>(% AVG.) |
|------------------------------------|-----------------|-------------------------|---------------------------|---------------------------|------------------------|------------------------|------------------------|------------------------|
| PEND OREILLE RIVER b1 Box Canyon 2 | MAY-SEP         | 13100.0                 | 7610.0                    | 58                        | 10230.0                | 78                     | 4990.0                 | 38                     |
|                                    | MAY-JUL         | 11840.0                 | 6790.0                    | 57                        | 9160.0                 | 77                     | 4420.0                 | 37                     |
|                                    | MAY-JUN         | 9879.0                  | 5630.0                    | 57                        | 7610.0                 | 77                     | 3650.0                 | 37                     |
| CHAMOKANE CREEK                    | MAY-AUG         | 9.2                     | 5.2                       | 57                        | 9.0                    | 98                     | 2.0                    | 22                     |
|                                    | JUL-AUG         | 3.6                     | 1.9                       | 53                        | 3.0                    | 83                     | 0.0                    | 0                      |
| COLVILLE RIVER at Kettle Falls     | MAY-SEP         | 89.0                    | 52.0                      | 58                        | 85.0                   | 96                     | 19.0                   | 21                     |
|                                    | MAY-JUL         | 78.0                    | 46.0                      | 59                        | 75.0                   | 96                     | 17.0                   | 22                     |
|                                    | MAY-JUN         | 68.0                    | 40.0                      | 59                        | 65.0                   | 96                     | 15.0                   | 22                     |
| KETTLE RIVER nr Laurier            | MAY-SEP         | 1644.0                  | 1010.0                    | 61                        | 1310.0                 | 80                     | 710.0                  | 43                     |
|                                    | MAY-JUL         | 1545.0                  | 945.0                     | 61                        | 1220.0                 | 79                     | 670.0                  | 43                     |
|                                    | MAY-JUN         | 1362.0                  | 830.0                     | 61                        | 1080.0                 | 79                     | 590.0                  | 43                     |
| COLUMBIA RIVER at Birchbank 2      | MAY-SEP         | 41540.0                 | 35400.0                   | 85                        | 42460.0                | 102                    | 28340.0                | 68                     |
|                                    | MAY-JUL         | 32600.0                 | 27400.0                   | 84                        | 32940.0                | 101                    | 21860.0                | 67                     |
|                                    | MAY-JUN         | 22800.0                 | 19200.0                   | 84                        | 23100.0                | 101                    | 15300.0                | 67                     |
| COLUMBIA RIVER at Grand Coulee 2   | MAY-SEP         | 59780.0                 | 45900.0                   | 77                        | 51880.0                | 87                     | 39920.0                | 67                     |
|                                    | MAY-JUL         | 49060.0                 | 37300.0                   | 76                        | 42210.0                | 86                     | 32390.0                | 66                     |
|                                    | MAY-JUN         | 36760.0                 | 27940.0                   | 76                        | 31320.0                | 85                     | 24260.0                | 66                     |

## RESERVOIR STORAGE (1000AF)

## WATERSHED SNOWPACK ANALYSIS

| RESERVOIR | USEABLE CAPACITY | ** USEABLE STORAGE ** |           |        | WATERSHED          | NO. COURSES AVG'D | THIS YEAR AS % OF |         |
|-----------|------------------|-----------------------|-----------|--------|--------------------|-------------------|-------------------|---------|
|           |                  | THIS YEAR             | LAST YEAR | AVG.   |                    |                   | LAST YR.          | AVERAGE |
| ROOSEVELT | 5232.0           | 4296.2                | 2700.7    | 1310.0 | Colville River     | 0                 | 0                 | 0       |
| BANKS     | 715.0            | 693.5                 | 661.5     | 435.0  | Pend Oreille River | 10                | 87                | 54      |
|           |                  |                       |           |        | Kettle River       | 7                 | 57                | 42      |

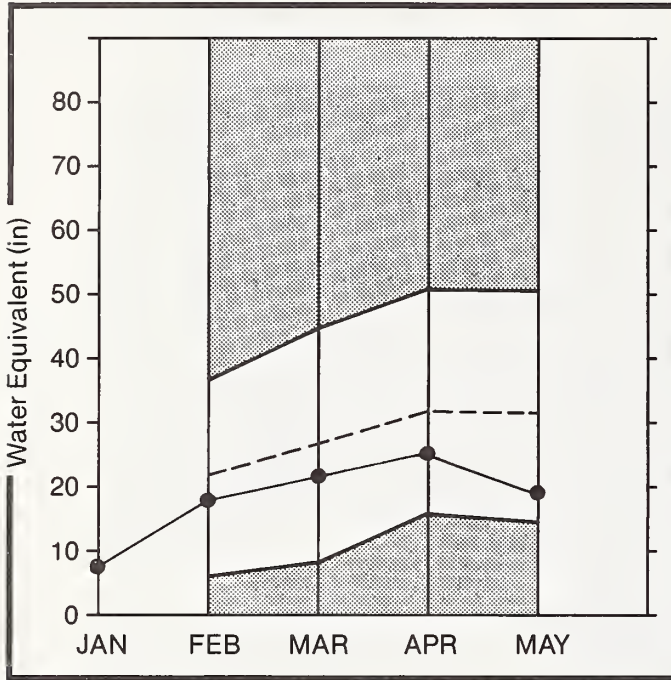
1 - Reas. max. and reas. min. forecasts are for 5% and 95% exceedance levels and also (2) below.

2 - Corrected for upstream diversions or changes in reservoir storage.

The average is computed for the 1961-85 base period.

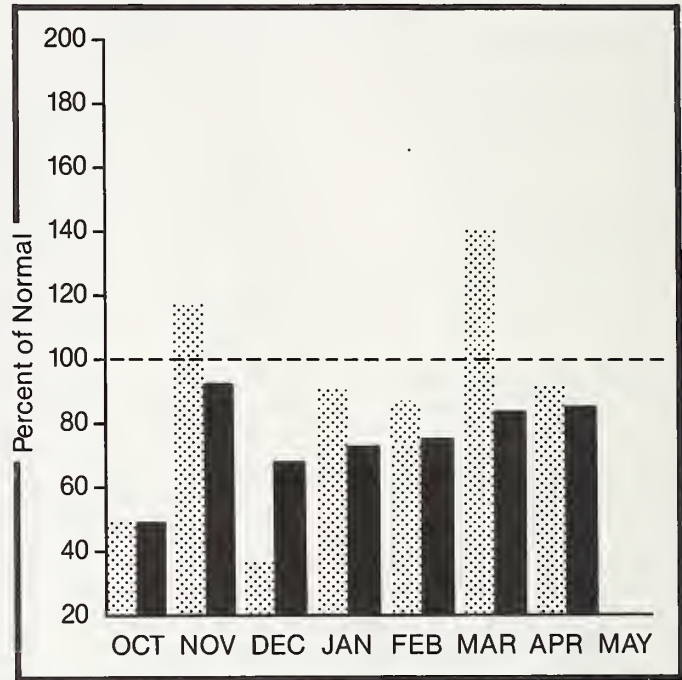
# OKANOGAN AND METHOW

**Mountain snowpack\* (inches)**

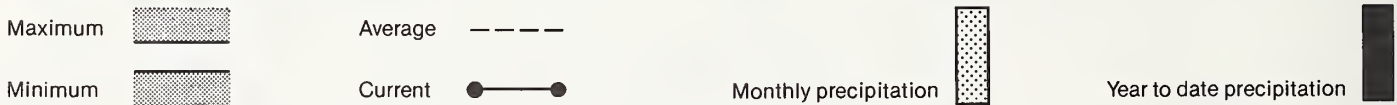


\*Based on selected stations

**Precipitation\* (percent of normal)**



\*Based on selected stations



## OKANOGAN - METHOW RIVER BASINS

### WATER SUPPLY OUTLOOK:

Summer runoff forecasted for the Okanogan River is 72% of normal. The Similkameen River 66% and the Methow River is 74% of normal. Okanogan River streamflow was at 109% of average for April, while on the Similkameen River it was 178%. Temperatures for April were 8 degrees above normal, continuing the early snow melt. Snow cover as of April 1 is 59% of average on the Okanogan-Methow Basin, down from 77% last month. Maximum snowwater at the measured courses occurred at Harts Pass, elevation 6000 feet, with 81 inches of snow and 36 inches of water content. April precipitation in the Okanogan was at 92% with water year to date 85% of average. Storage in the Conconully Reservoirs is at 16,300 acre feet which is 69% of capacity and 102% of May 1 average.

For more information contact your local Soil Conservation Service office.

# OKANOGAN - METHOW RIVER BASINS

## STREAMFLOW FORECASTS

| FORECAST POINT              | FORECAST PERIOD | 25 YR. AVG.<br>(1000AF) | MOST PROBABLE<br>(1000AF) | MOST PROBABLE<br>(% AVG.) | REAS. MAX.<br>(1000AF) | REAS. MAX.<br>(% AVG.) | REAS. MIN.<br>(1000AF) | REAS. MIN.<br>(% AVG.) |
|-----------------------------|-----------------|-------------------------|---------------------------|---------------------------|------------------------|------------------------|------------------------|------------------------|
| SIMILKAMEEN R. nr Nighthawk | MAY-SEP         | 1345.0                  | 905.0                     | 67                        | 1170.0                 | 87                     | 340.0                  | 25                     |
|                             | MAY-JUL         | 1246.0                  | 830.0                     | 67                        | 1080.0                 | 87                     | 580.0                  | 47                     |
|                             | MAY-JUN         | 1042.0                  | 700.0                     | 67                        | 900.0                  | 86                     | 490.0                  | 47                     |
| OKANOGAN R. nr Tonasket     | MAY-SEP         | 1527.0                  | 1100.0                    | 72                        | 1340.0                 | 88                     | 860.0                  | 56                     |
|                             | MAY-JUL         | 1367.0                  | 975.0                     | 71                        | 1190.0                 | 87                     | 760.0                  | 56                     |
|                             | MAY-JUN         | 1123.0                  | 800.0                     | 71                        | 980.0                  | 87                     | 620.0                  | 55                     |
| METHOW RIVER nr Pateros     | MAY-SEP         | 898.0                   | 660.0                     | 73                        | 880.0                  | 98                     | 440.0                  | 49                     |
|                             | MAY-JUL         | 824.0                   | 610.0                     | 74                        | 810.0                  | 98                     | 410.0                  | 50                     |
|                             | MAY-JUN         | 687.0                   | 510.0                     | 74                        | 680.0                  | 99                     | 350.0                  | 51                     |

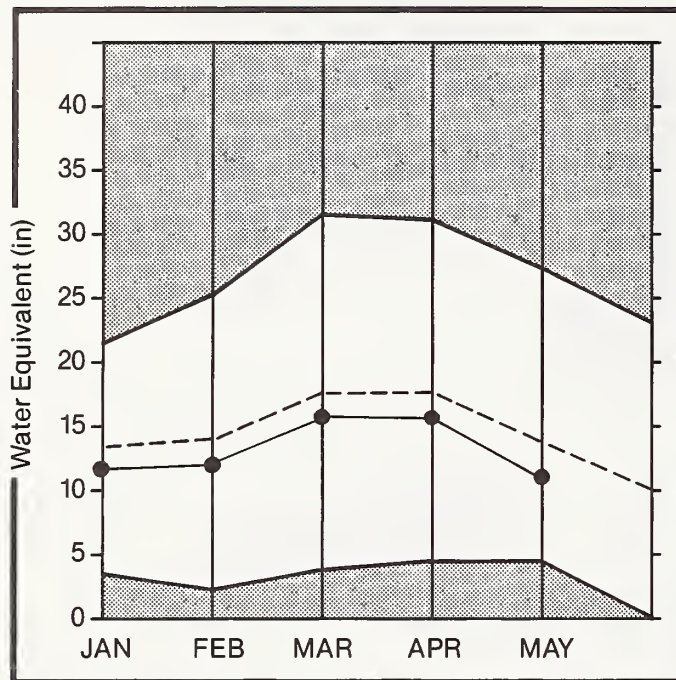
| RESERVOIR STORAGE        |                  | (1000AF)              |           |      | WATERSHED SNOWPACK ANALYSIS |                      |                   |         |
|--------------------------|------------------|-----------------------|-----------|------|-----------------------------|----------------------|-------------------|---------|
| RESERVOIR                | USEABLE CAPACITY | ** USEABLE STORAGE ** |           |      | WATERSHED                   | NO. COURSES<br>AVG'D | THIS YEAR AS % OF |         |
|                          |                  | THIS YEAR             | LAST YEAR | AVG. |                             |                      | LAST YR.          | AVERAGE |
| CONCONULLY LAKE (SALMON) | 10.5             | 8.6                   | 8.6       | 8.0  | Okanogan River              | 26                   | 63                | 57      |
| CONCONULLY RESERVOIR     | 13.0             | 7.7                   | 8.1       | 8.0  | Methow River                | 2                    | 83                | 61      |

1 - Reas. max. and reas. min. forecasts are for 5% and 95% exceedance levels and also (2) below.  
 2 - Corrected for upstream diversions or changes in reservoir storage.  
 The average is computed for the 1961-85 base period.



# WENATCHEE AND CHELAN

**Mountain snowpack\* (inches)**



\*Based on selected stations

Maximum



Average



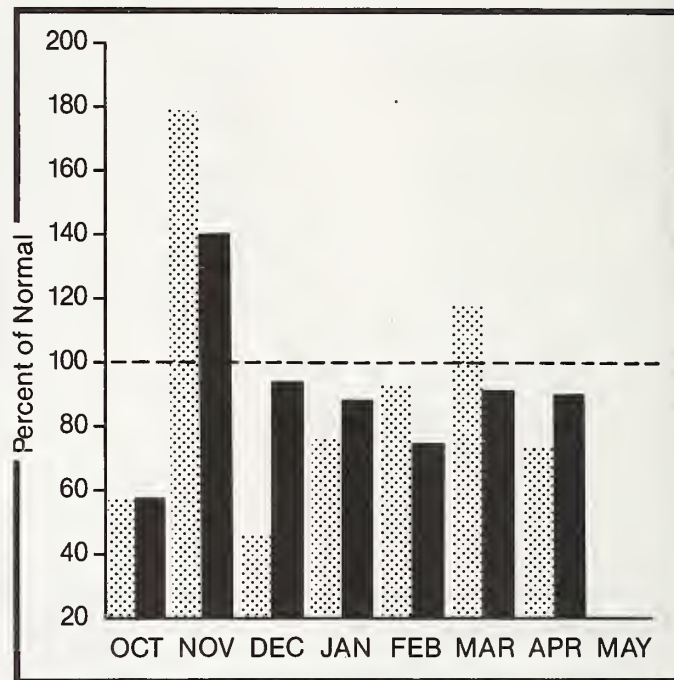
Minimum



Current



**Precipitation\* (percent of normal)**



\*Based on selected stations

Monthly precipitation



Year to date precipitation



## WENATCHEE - CHELAN RIVER BASINS

### WATER SUPPLY OUTLOOK:

April streamflow within the basin was 145% of normal. Runoff for the Wenatchee River is forecast to be 75% of normal, down from 85% last month. Forecasts in the Chelan and Stehekin River runoff are for 73% of average. Stemilt and Icicle are forecast at 72% and 74%. April precipitation was 74% of normal in the basin and 90% for the water year to date. Reservoir storage in Lake Chelan is at 213,100 acre feet or 47% of May 1 average and 32% of capacity. Snowpack in the Wenatchee-Chelan Basin is 76% of normal, down from 88% last month. Lyman Lake had the most snowwater with 55.6 inches in 108 inches of snow as of May 1.

For more information contact your local Soil Conservation Service office.



# WENATCHEE - CHELAN RIVER BASINS

## STREAMFLOW FORECASTS

| FORECAST POINT                   | FORECAST PERIOD | 25 YR. AVG. (1000AF) | MOST PROBABLE (1000AF) | MOST PROBABLE (% AVG.) | REAS. MAX. (1000AF) | REAS. MAX. (% AVG.) | REAS. MIN. (1000AF) | REAS. MIN. (% AVG.) |
|----------------------------------|-----------------|----------------------|------------------------|------------------------|---------------------|---------------------|---------------------|---------------------|
| CHELAN RIVER at Chelan 1         | MAY-SEP         | 1075.0               | 785.0                  | 73                     | 950.0               | 88                  | 620.0               | 58                  |
|                                  | MAY-JUL         | 931.0                | 690.0                  | 74                     | 830.0               | 89                  | 550.0               | 59                  |
|                                  | MAY-JUN         | 707.0                | 520.0                  | 74                     | 630.0               | 89                  | 410.0               | 58                  |
| STEHEKIN R. at Stehekin          | MAY-SEP         | 775.0                | 570.0                  | 74                     | 650.0               | 84                  | 490.0               | 63                  |
|                                  | MAY-JUL         | 645.0                | 480.0                  | 74                     | 560.0               | 87                  | 420.0               | 65                  |
|                                  | MAY-JUN         | 473.0                | 350.0                  | 74                     | 840.0               | 178                 | 310.0               | 66                  |
| ENTIAT RIVER nr Ardenvoir        | MAY-SEP         | 217.0                | 160.0                  | 74                     | 190.0               | 88                  | 130.0               | 60                  |
|                                  | MAY-JUL         | 195.0                | 145.0                  | 74                     | 175.0               | 90                  | 115.0               | 59                  |
|                                  | MAY-JUN         | 155.0                | 115.0                  | 74                     | 140.0               | 90                  | 90.0                | 58                  |
| WENATCHEE RIVER at Plain         | MAY-SEP         | 1136.0               | 850.0                  | 75                     | 1230.0              | 108                 | 480.0               | 42                  |
|                                  | MAY-JUL         | 1002.0               | 750.0                  | 75                     | 1080.0              | 108                 | 420.0               | 42                  |
|                                  | MAY-JUN         | 765.0                | 570.0                  | 75                     | 820.0               | 107                 | 320.0               | 42                  |
| WENATCHEE R. at Peshastin        | MAY-SEP         | 1489.0               | 1100.0                 | 74                     | 1590.0              | 107                 | 610.0               | 41                  |
|                                  | MAY-JUL         | 1327.0               | 980.0                  | 74                     | 1420.0              | 107                 | 540.0               | 41                  |
|                                  | MAY-JUN         | 1027.0               | 760.0                  | 74                     | 1100.0              | 107                 | 420.0               | 41                  |
| STEMILT nr Wenatchee (miners in) | MAY-SEP         | 138.0                | 99.0                   | 72                     | 145.0               | 105                 | 53.0                | 38                  |
| ICICLE CREEK nr Leavenworth      | APR-SEP         | 370.0                | 290.0                  | 78                     | 410.0               | 111                 | 170.0               | 46                  |
|                                  | APR-JUL         | 340.0                | 265.0                  | 78                     | 380.0               | 112                 | 150.0               | 44                  |
|                                  | APR-JUN         | 270.0                | 210.0                  | 78                     | 300.0               | 111                 | 120.0               | 44                  |
| COLUMBIA R. bl Rock Island Dam 2 | MAY-SEP         | 65060.0              | 50200.0                | 77                     | 57360.0             | 88                  | 43040.0             | 66                  |
|                                  | MAY-JUL         | 53860.0              | 41200.0                | 76                     | 47130.0             | 88                  | 35380.0             | 66                  |
|                                  | MAY-JUN         | 40550.0              | 30820.0                | 76                     | 35280.0             | 87                  | 26360.0             | 65                  |

| RESERVOIR STORAGE |                  | (1000AF)              |           |       | WATERSHED SNOWPACK ANALYSIS |                   |                   |         |
|-------------------|------------------|-----------------------|-----------|-------|-----------------------------|-------------------|-------------------|---------|
| RESERVOIR         | USEABLE CAPACITY | ** USEABLE STORAGE ** |           |       | WATERSHED                   | NO. COURSES AVG'D | THIS YEAR AS % OF |         |
|                   |                  | THIS YEAR             | LAST YEAR | AVG.  |                             |                   | LAST YR.          | AVERAGE |
| CHELAN LAKE       | 676.1            | 213.1                 | 382.8     | 448.8 | Chelan Lake Basin           | 4                 | 103               | 85      |
|                   |                  |                       |           |       | Entiat River                | 0                 | 0                 | 0       |
|                   |                  |                       |           |       | Wenatchee River             | 4                 | 104               | 65      |
|                   |                  |                       |           |       | Colockum Creek              | 1                 | 0                 | 0       |
|                   |                  |                       |           |       | Squilchuck Creek            | 0                 | 0                 | 0       |
|                   |                  |                       |           |       | Stemilt Creek               | 0                 | 0                 | 0       |
|                   |                  |                       |           |       |                             |                   |                   |         |

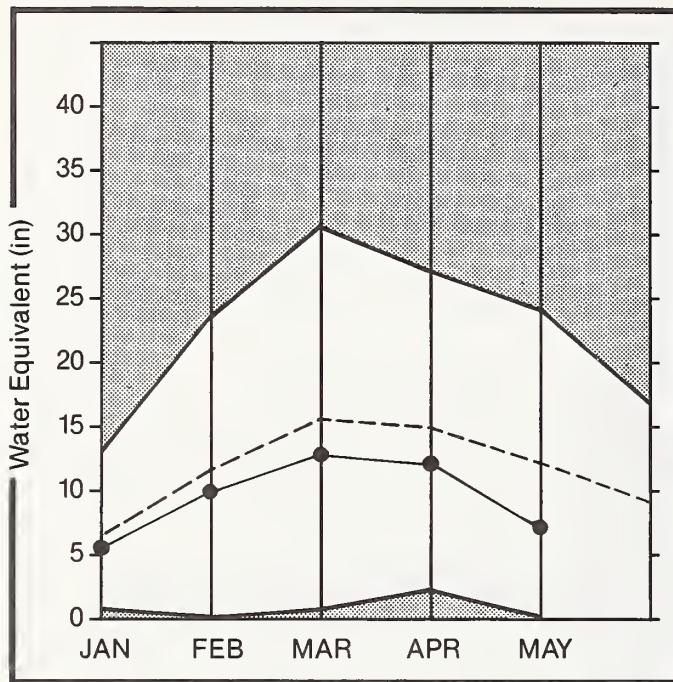
1 - Reas. max. and reas. min. forecasts are for 5% and 95% exceedance levels and also (2) below.

2 - Corrected for upstream diversions or changes in reservoir storage.



The average is computed for the 1961-85 base period.

# YAKIMA

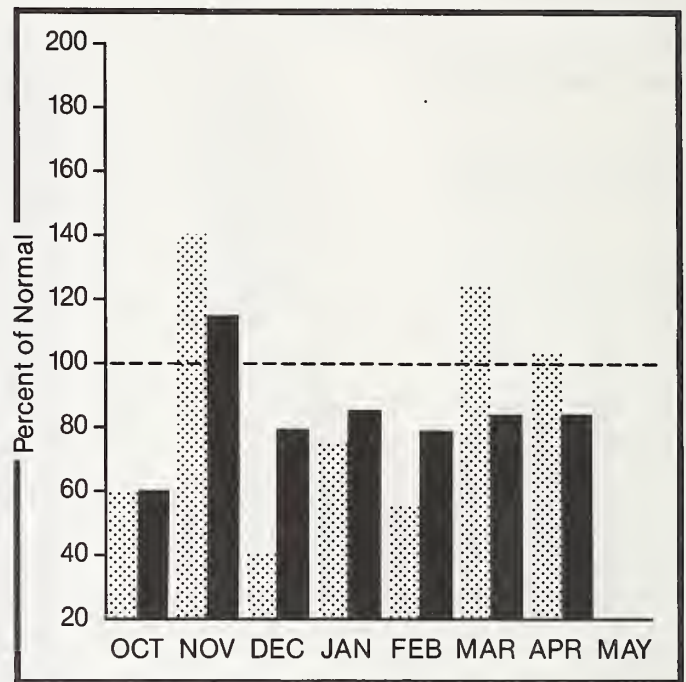
**Mountain snowpack\*** (inches)





\*Based on selected stations

Maximum  Average   
Minimum  Current 

**Precipitation\*** (percent of normal)



\*Based on selected stations

Monthly precipitation  Year to date precipitation 

## YAKIMA RIVER BASIN

### WATER SUPPLY OUTLOOK:

Reservoir storage is improved with May 1 values for the five major reservoirs at 727,800 acre feet or 93% of normal. Drafting of reservoir storage has started to meet irrigation water demand. April streamflow for the Yakima Basin was 113% of normal. Forecasts for the Yakima Basin runoff are lower than last month. These vary throughout the basin as follows: the Yakima River at Cle Elum 66%, Naches River 70%, the Yakima River at Parker 70% and Ahtanum Creek 74%. Snowpack is 58% of average in the Yakima Basin based upon measurements at 17 snow courses; last month it was 79% of normal. April precipitation was 104% of normal and 84% for the water year to date. April temperatures were four degrees above average.

For more information contact your local Soil Conservation Service office.

# YAKIMA RIVER BASIN

## STREAMFLOW FORECASTS

| FORECAST POINT             | FORECAST PERIOD | 25 YR. AVG.<br>(1000AF) | MOST PROBABLE<br>(1000AF) | MOST PROBABLE<br>(% AVG.) | REAS. MAX.<br>(1000AF) | REAS. MAX.<br>(% AVG.) | REAS. MIN.<br>(1000AF) | REAS. MIN.<br>(% AVG.) |
|----------------------------|-----------------|-------------------------|---------------------------|---------------------------|------------------------|------------------------|------------------------|------------------------|
| YAKIMA RIVER at Martin 1   | MAY-SEP         | 109.0                   | 70.0                      | 64                        | 83.0                   | 76                     | 57.0                   | 52                     |
|                            | MAY-JUL         | 100.0                   | 64.0                      | 64                        | 76.0                   | 76                     | 52.0                   | 52                     |
|                            | MAY-JUN         | 85.0                    | 54.0                      | 64                        | 64.0                   | 75                     | 44.0                   | 52                     |
| YAKIMA RIVER at Cle Elum 2 | MAY-SEP         | 786.0                   | 520.0                     | 66                        | 620.0                  | 79                     | 420.0                  | 53                     |
|                            | MAY-JUL         | 682.0                   | 450.0                     | 66                        | 540.0                  | 79                     | 360.0                  | 53                     |
|                            | MAY-JUN         | 570.0                   | 380.0                     | 67                        | 450.0                  | 79                     | 300.0                  | 53                     |
| YAKIMA RIVER nr Parker 2   | MAY-SEP         | 1682.0                  | 1200.0                    | 71                        | 1520.0                 | 90                     | 880.0                  | 52                     |
|                            | MAY-JUL         | 1469.0                  | 1040.0                    | 71                        | 1320.0                 | 90                     | 760.0                  | 52                     |
|                            | MAY-JUN         | 1250.0                  | 890.0                     | 71                        | 1130.0                 | 90                     | 350.0                  | 28                     |
| KACHESS RIVER nr Easton 1  | MAY-SEP         | 108.0                   | 71.0                      | 66                        | 86.0                   | 80                     | 56.0                   | 52                     |
|                            | MAY-JUL         | 89.0                    | 58.0                      | 65                        | 70.0                   | 79                     | 46.0                   | 52                     |
|                            | MAY-JUN         | 77.0                    | 50.0                      | 65                        | 60.0                   | 78                     | 40.0                   | 52                     |
| CLE ELUM RIVER nr Roslyn 1 | MAY-SEP         | 393.0                   | 270.0                     | 69                        | 320.0                  | 81                     | 220.0                  | 56                     |
|                            | MAY-JUL         | 353.0                   | 240.0                     | 68                        | 280.0                  | 79                     | 200.0                  | 57                     |
|                            | MAY-JUN         | 289.0                   | 200.0                     | 69                        | 240.0                  | 83                     | 170.0                  | 59                     |
| BUMPING RIVER nr Nile 1    | MAY-SEP         | 123.0                   | 86.0                      | 70                        | 104.0                  | 85                     | 68.0                   | 55                     |
|                            | MAY-JUL         | 112.0                   | 78.0                      | 70                        | 95.0                   | 85                     | 61.0                   | 54                     |
|                            | MAY-JUN         | 90.0                    | 63.0                      | 70                        | 77.0                   | 86                     | 50.0                   | 56                     |
| AMERICAN RIVER nr Nile     | MAY-SEP         | 107.0                   | 75.0                      | 70                        | 88.0                   | 82                     | 62.0                   | 58                     |
|                            | MAY-JUL         | 97.0                    | 68.0                      | 70                        | 80.0                   | 82                     | 56.0                   | 58                     |
|                            | MAY-JUN         | 79.0                    | 58.0                      | 73                        | 67.0                   | 85                     | 49.0                   | 62                     |
| TIETON RIVER at Tieton 1   | MAY-SEP         | 213.0                   | 160.0                     | 75                        | 190.0                  | 89                     | 130.0                  | 61                     |
|                            | MAY-JUL         | 177.0                   | 135.0                     | 76                        | 160.0                  | 90                     | 100.0                  | 56                     |
|                            | MAY-JUN         | 136.0                   | 100.0                     | 74                        | 120.0                  | 88                     | 80.0                   | 59                     |
| NACHES RIVER nr Naches 2   | MAY-SEP         | 726.0                   | 530.0                     | 73                        | 630.0                  | 87                     | 430.0                  | 59                     |
|                            | MAY-JUL         | 645.0                   | 470.0                     | 73                        | 560.0                  | 87                     | 380.0                  | 59                     |
|                            | MAY-JUN         | 533.0                   | 390.0                     | 73                        | 470.0                  | 88                     | 320.0                  | 60                     |
| AHTANUM CREEK nr Tampico 2 | MAY-SEP         | 39.0                    | 29.0                      | 74                        | 38.0                   | 97                     | 20.0                   | 51                     |
|                            | MAY-JUL         | 35.0                    | 26.0                      | 74                        | 34.0                   | 97                     | 18.0                   | 51                     |
|                            | MAY-JUN         | 29.0                    | 22.0                      | 76                        | 28.0                   | 97                     | 16.0                   | 55                     |

## RESERVOIR STORAGE

(1000AF)

## WATERSHED SNOWPACK ANALYSIS

| RESERVOIR    | USEABLE CAPACITY | **USEABLE STORAGE**<br>THIS YEAR | LAST YEAR | AVG.  | WATERSHED     | NO. COURSES<br>AVG'D | THIS YEAR AS % OF<br>LAST YR. | AVERAGE |
|--------------|------------------|----------------------------------|-----------|-------|---------------|----------------------|-------------------------------|---------|
| KEECHELUS    | 157.8            | 130.7                            | 130.4     | 119.0 | Yakima River  | 12                   | 93                            | 58      |
| KACHESS      | 239.0            | 126.7                            | 181.7     | 197.0 | Ahtanum Creek | 2                    | 89                            | 75      |
| CLE ELEM     | 436.9            | 246.0                            | 299.6     | 308.0 |               |                      |                               |         |
| BUMPING LAKE | 33.7             | 33.8                             | 15.7      | 15.0  |               |                      |                               |         |
| RIMROCK      | 198.0            | 190.6                            | 168.6     | 144.0 |               |                      |                               |         |

1 - Reas. max. and reas. min. forecasts are for 5% and 95% exceedance levels and also (2) below.

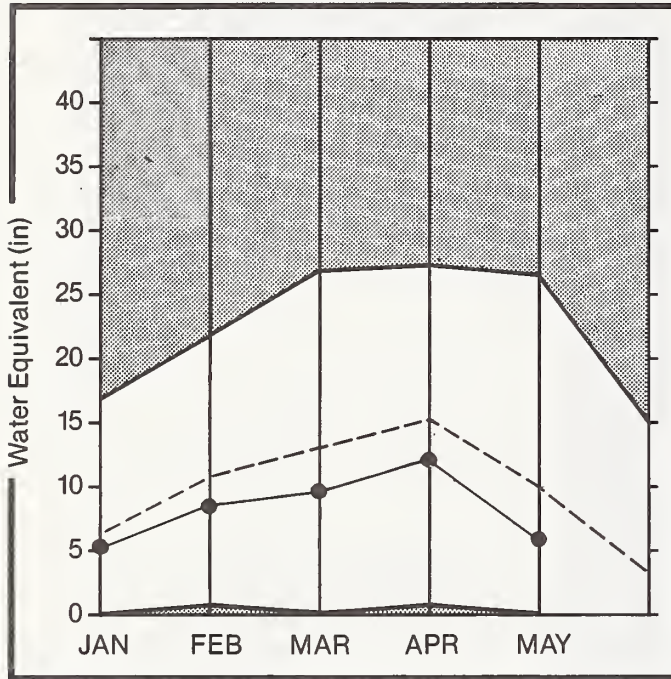
2 - Corrected for upstream diversions or changes in reservoir storage.

The average is computed for the 1961-85 base period.

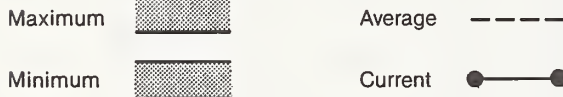


# WALLA WALLA

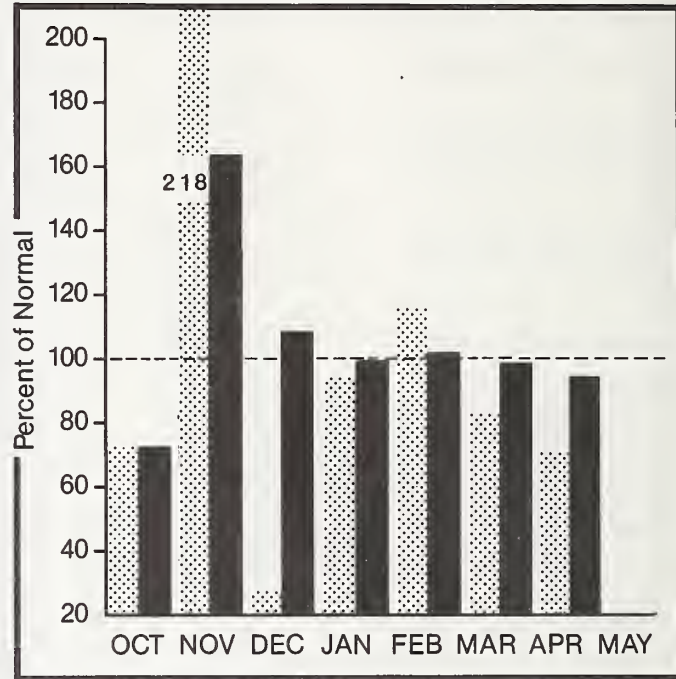
**Mountain snowpack\*** (inches)



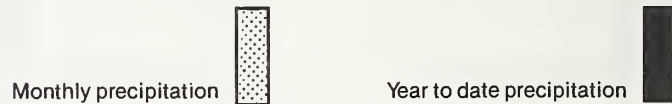
\*Based on selected stations



**Precipitation\*** (percent of normal)



\*Based on selected stations



## WALLA WALLA RIVER BASIN

### WATER SUPPLY OUTLOOK:

Streamflow for the Walla Walla River was at 38% of normal for April. Forecasts are 54% of average. Streamflow in the Walla Walla Basin for the coming summer is down from 70% last month. April precipitation was 71% of average and the water year to date precipitation has been 94% of normal. Snowpack in the Walla Walla River Basin is estimated to be 40% of normal. April temperatures were four degree's above average. Water content at the Touchet SNOTEL site was at 7.6 inches as of May 1 compared to an average of near 29 inches.

For more information contact your local Soil Conservation Service office.



# WALLA WALLA RIVER BASIN

## STREAMFLOW FORECASTS

| FORECAST POINT                     | FORECAST PERIOD | 25 YR. AVG.<br>(1000AF) | MOST PROBABLE<br>(1000AF) | MOST PROBABLE<br>(% AVG.) | REAS. MAX.<br>(1000AF) | REAS. MAX.<br>(% AVG.) | REAS. MIN.<br>(1000AF) | REAS. MIN.<br>(% AVG.) |
|------------------------------------|-----------------|-------------------------|---------------------------|---------------------------|------------------------|------------------------|------------------------|------------------------|
| MILL CREEK at Walla Walla          | MAY-SEP         | 7.7                     | 3.8                       | 49                        | 7.0                    | 91                     | 1.0                    | 13                     |
|                                    | MAY-JUL         | 7.5                     | 3.6                       | 48                        | 6.0                    | 80                     | 1.0                    | 13                     |
|                                    | MAY-JUN         | 7.3                     | 3.5                       | 48                        | 6.0                    | 82                     | 1.0                    | 14                     |
| SF WALLA WALLA nr Milton Freewater | MAY-JUL         | 39.0                    | 21.0                      | 54                        | 29.0                   | 74                     | 13.0                   | 33                     |
| COUSE CK nr Milton Freewater       | MAY-JUL         | 1.6                     | 0.8                       | 50                        | 1.0                    | 62                     | 0.0                    | 0                      |
| PINE CREEK near Weston             | MAY-JUL         | 0.8                     | 0.4                       | 50                        | 1.0                    | 125                    | 0.0                    | 0                      |
| COLUMBIA R. at The Dalles 2        | MAY-SEP         | 88790.0                 | 58200.0                   | 66                        | 69740.0                | 79                     | 46660.0                | 53                     |
|                                    | MAY-JUL         | 74070.0                 | 47800.0                   | 65                        | 57430.0                | 78                     | 38170.0                | 52                     |
|                                    | MAY-JUN         | 57430.0                 | 37330.0                   | 65                        | 44800.0                | 78                     | 29860.0                | 52                     |

| RESERVOIR STORAGE |                  | (1000AF)              |                   | WATERSHED SNOWPACK ANALYSIS |                      |                   |         |
|-------------------|------------------|-----------------------|-------------------|-----------------------------|----------------------|-------------------|---------|
| RESERVOIR         | USEABLE CAPACITY | ** USEABLE STORAGE ** |                   | WATERSHED                   | NO. COURSES<br>AVG'D | THIS YEAR AS % OF |         |
|                   | I YEAR           | THIS YEAR             | LAST YEAR<br>AVG. |                             |                      | LAST YR.          | AVERAGE |
|                   |                  |                       |                   | Mill Creek                  | 1                    | 0                 | 0       |

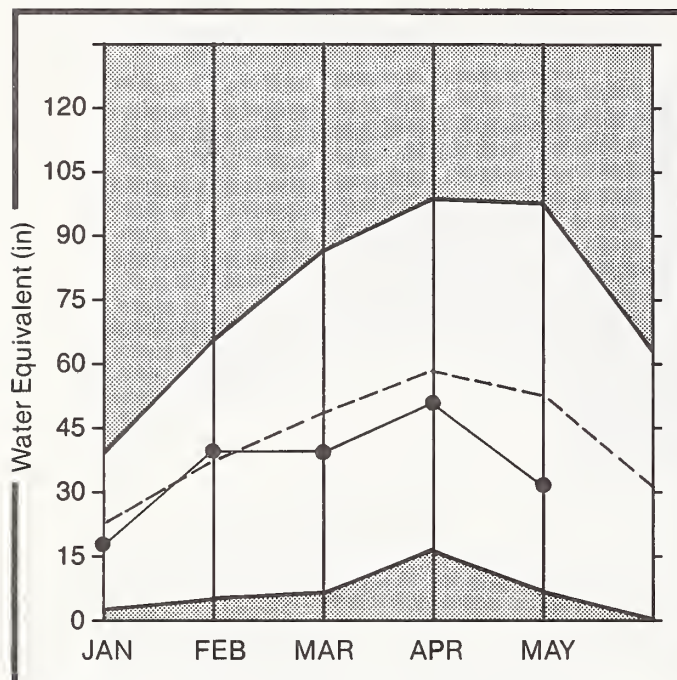
1 - Reas. max. and reas. min. forecasts are for 5% and 95% exceedance levels and also (2) below.

2 - Corrected for upstream diversions or changes in reservoir storage.

The average is computed for the 1961-85 base period.

# COWLITZ AND LEWIS

**Mountain snowpack\* (inches)**



\*Based on selected stations

Maximum



Average



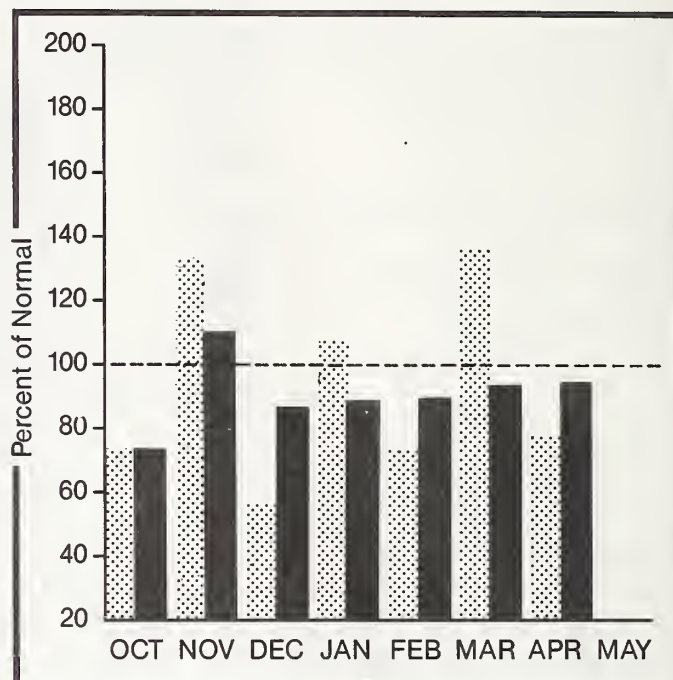
Minimum



Current



**Precipitation\* (percent of normal)**



\*Based on selected stations

Monthly precipitation



Year to date precipitation



## COWLITZ - LEWIS RIVER BASINS

### WATER SUPPLY OUTLOOK:

May forecasts for the Lewis River is 75% and for the Cowlitz River 71%. May 1 snow cover for the Cowlitz-Lewis Basin is at 59% of normal down from 86% for April 1. The Plains of Abraham SNOTEL site still maintained the maximum water content for the basin with a snowpack containing 74.1 inches of water on May 1. April precipitation was 78% of normal bringing the water year to date precipitation to 94% of average. Temperatures averaged four degrees above normal for April. Climbing Mt. St Helens on a permit basis is now available from the US Forest Service.

For more information contact your local Soil Conservation Service office.

# COWLITZ - LEWIS RIVER BASINS

## STREAMFLOW FORECASTS

| FORECAST POINT               | FORECAST PERIOD | 25 YR. AVG.<br>(1000AF) | MOST PROBABLE<br>(1000AF) | MOST PROBABLE<br>(% AVG.) | REAS. MAX.<br>(1000AF) | REAS. MAX.<br>(% AVG.) | REAS. MIN.<br>(1000AF) | REAS. MIN.<br>(% AVG.) |
|------------------------------|-----------------|-------------------------|---------------------------|---------------------------|------------------------|------------------------|------------------------|------------------------|
| LEWIS RIVER at Ariel 2       | MAY-SEP         | 892.0                   | 670.0                     | 75                        | 880.0                  | 99                     | 460.0                  | 52                     |
|                              | MAY-JUL         | 732.0                   | 550.0                     | 75                        | 730.0                  | 100                    | 370.0                  | 51                     |
|                              | MAY-JUN         | 606.0                   | 450.0                     | 74                        | 600.0                  | 99                     | 300.0                  | 50                     |
| COWLITZ R. bl Mayfield Dam 2 | MAY-SEP         | 1604.0                  | 1140.0                    | 71                        | 1930.0                 | 120                    | 350.0                  | 22                     |
|                              | MAY-JUL         | 1350.0                  | 960.0                     | 71                        | 1620.0                 | 120                    | 300.0                  | 22                     |
|                              | MAY-JUN         | 1092.0                  | 780.0                     | 71                        | 1320.0                 | 121                    | 250.0                  | 23                     |
| COWLITZ R. at Castle Rock 2  | MAY-SEP         | 2050.0                  | 1450.0                    | 71                        | 2460.0                 | 120                    | 450.0                  | 22                     |
|                              | MAY-JUL         | 1706.0                  | 1210.0                    | 71                        | 2050.0                 | 120                    | 370.0                  | 22                     |
|                              | MAY-JUN         | 1378.0                  | 980.0                     | 71                        | 1660.0                 | 120                    | 300.0                  | 22                     |

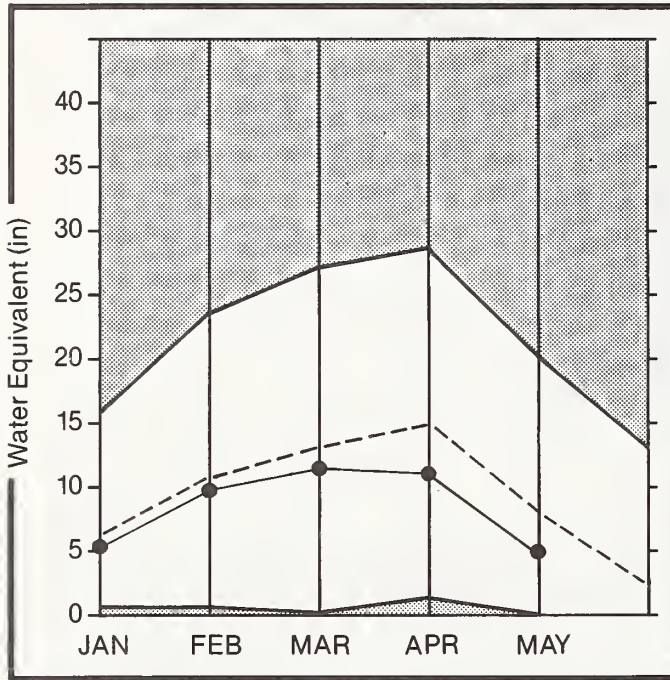
| RESERVOIR STORAGE |                  | (1000AF)              | WATERSHED SNOWPACK ANALYSIS |                   |                   |         |
|-------------------|------------------|-----------------------|-----------------------------|-------------------|-------------------|---------|
| RESERVOIR         | USEABLE CAPACITY | ** USEABLE STORAGE ** | WATERSHED                   | NO. COURSES AVG'D | THIS YEAR AS % OF |         |
|                   | THIS YEAR        | LAST YEAR AVG.        |                             |                   | LAST YR.          | AVERAGE |
|                   |                  |                       | Cowlitz River               | 1                 | 59                | 42      |
|                   |                  |                       | Lewis River                 | 4                 | 88                | 49      |

1 - Reas. max. and reas. min. forecasts are for 5% and 95% exceedance levels and also (2) below.  
2 - Corrected for upstream diversions or changes in reservoir storage.  
The average is computed for the 1961-85 base period.



# WHITE - GREEN

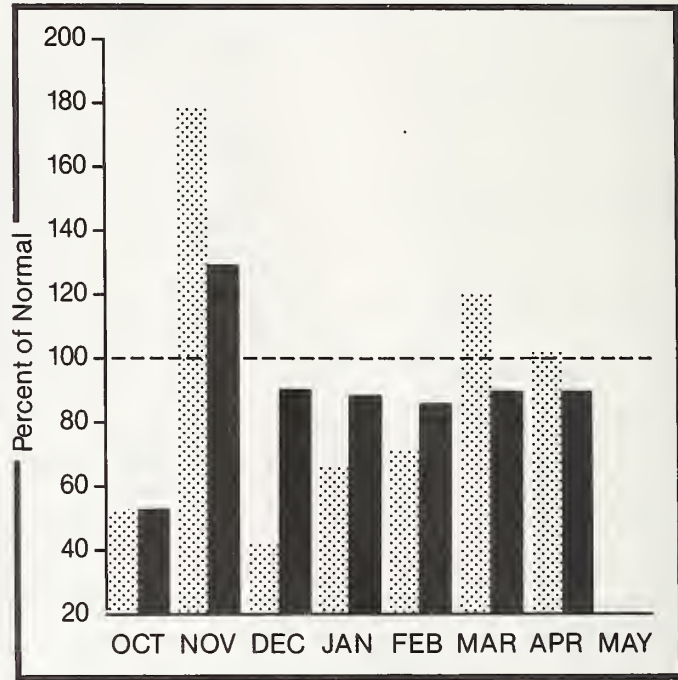
**Mountain snowpack\*** (inches)



\*Based on selected stations

Maximum  Average   
Minimum  Current 

**Precipitation\*** (percent of normal)



\*Based on selected stations

Monthly precipitation  Year to date precipitation 

## WHITE - GREEN RIVER BASINS

### WATER SUPPLY OUTLOOK:

April precipitation was 102% of normal, bringing the water year to date to 90% of average. Snowpack is 64% of normal for the basin, down from 85% last month. Summer runoff is forecasted to be 77% of normal on the Green River and 76% on the Cedar River. Snowwater content at the Stampede Pass SNOTEL site was 34.2 inches on May 1. Temperatures for April followed the March trend and averaged three degrees above normal resulting in a complete meltout of the low elevation snow.

For more information contact your local Soil Conservation Service office.



# WHITE - GREEN RIVER BASINS

## STREAMFLOW FORECASTS

| FORECAST POINT                     | FORECAST PERIOD | 25 YR.           | MOST                 | MOST                 | REAS.            | REAS.            | REAS.            | REAS.            |
|------------------------------------|-----------------|------------------|----------------------|----------------------|------------------|------------------|------------------|------------------|
|                                    |                 | AVG.<br>(1000AF) | PROBABLE<br>(1000AF) | PROBABLE<br>(% AVG.) | MAX.<br>(1000AF) | MAX.<br>(% AVG.) | MIN.<br>(1000AF) | MIN.<br>(% AVG.) |
| GREEN RIVER bl Howard Hanson Dam 2 | MAY-SEP         | 207.0            | 160.0                | 77                   | 195.0            | 94               | 125.0            | 60               |
|                                    | MAY-JUL         | 177.0            | 135.0                | 76                   | 165.0            | 93               | 105.0            | 59               |
|                                    | MAY-JUN         | 153.0            | 120.0                | 78                   | 146.0            | 95               | 94.0             | 61               |
| CEDAR RIVER nr Cedar Falls         | MAY-SEP         | 74.0             | 56.0                 | 76                   | 69.0             | 93               | 43.0             | 58               |
|                                    | MAY-JUL         | 65.5             | 50.0                 | 76                   | 61.0             | 93               | 39.0             | 60               |
|                                    | MAY-JUN         | 54.1             | 41.0                 | 76                   | 50.0             | 92               | 32.0             | 59               |

## RESERVOIR STORAGE

(1000AF)

## WATERSHED SNOWPACK ANALYSIS

| RESERVOIR | USEABLE  | ** USEABLE STORAGE ** |           |      | WATERSHED   | NO. COURSES<br>AVG'D | THIS YEAR AS % OF |         |
|-----------|----------|-----------------------|-----------|------|-------------|----------------------|-------------------|---------|
|           | CAPACITY | THIS YEAR             | LAST YEAR | AVG. |             |                      | LAST YR.          | AVERAGE |
|           |          |                       |           |      | White River | 2                    | 109               | 91      |
|           |          |                       |           |      | Green River | 3                    | 113               | 38      |

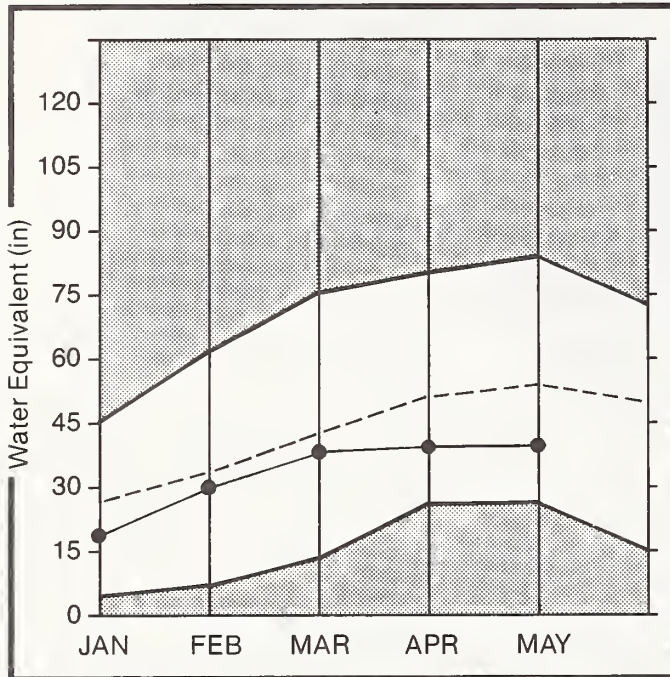
1 - Reas. max. and reas. min. forecasts are for 5% and 95% exceedance levels and also (2) below.

2 - Corrected for upstream diversions or changes in reservoir storage.

The average is computed for the 1961-85 base period.

# NORTH PUGET SOUND

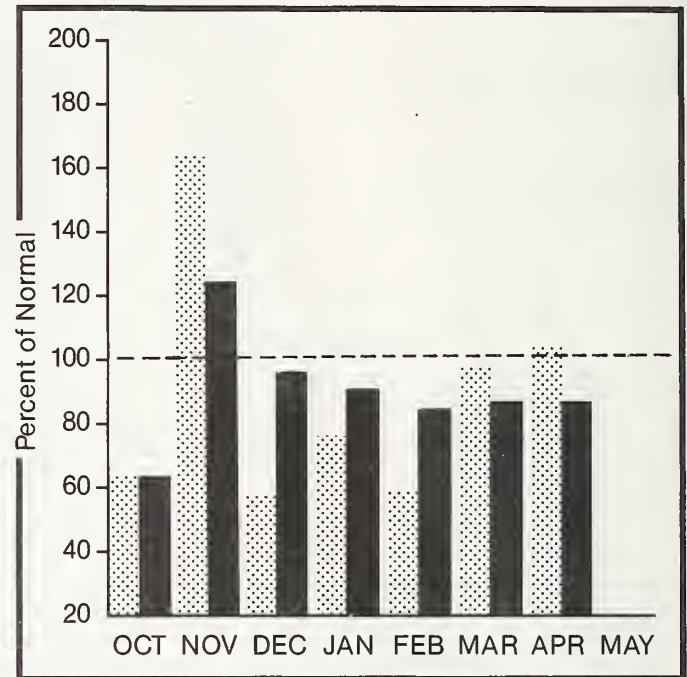
**Mountain snowpack\*** (inches)



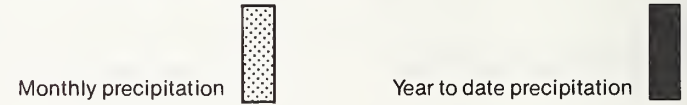
\*Based on selected stations



**Precipitation\*** (percent of normal)



\*Based on selected stations



## NORTH PUGET SOUND RIVER BASINS

### WATER SUPPLY OUTLOOK:

Runoff for the Skagit River is forecasted to be 81% of normal. Reservoir storage is above average with Ross Lake storing 773,200 acre feet as of May 1; 55% of capacity. Precipitation values for April were 101% of average with a water year to date at 88% of normal. Snowcover for April 1 in the North Puget Basin is 74% of normal with Devil's Park snowcourse at 5900 feet in elevation having 84 inches of snow and 38.0 inches of water content. Temperatures were three degrees above normal for April.

For more information contact your local Soil Conservation Service office.

# NORTH PUGET SOUND RIVER BASINS

## STREAMFLOW FORECASTS

| FORECAST POINT             | FORECAST PERIOD | 25 YR. AVG. (1000AF) | MOST PROBABLE (1000AF) | MOST PROBABLE (% AVG.) | REAS. MAX. (1000AF) | REAS. MAX. (% AVG.) | REAS. MIN. (1000AF) | REAS. MIN. (% AVG.) |
|----------------------------|-----------------|----------------------|------------------------|------------------------|---------------------|---------------------|---------------------|---------------------|
| SKAGIT RIVER at Newhalem 2 | MAY-AUG         | 2532.0               | 2050.0                 | 81                     | 2430.0              | 96                  | 1670.0              | 66                  |
|                            | MAY-SEP         | 2062.0               | 1670.0                 | 81                     | 1980.0              | 96                  | 1360.0              | 66                  |
|                            | MAY-JUL         | 1689.0               | 1360.0                 | 81                     | 1610.0              | 95                  | 1110.0              | 66                  |
|                            | MAY-JUN         | 1485.0               | 1200.0                 | 81                     | 1420.0              | 96                  | 980.0               | 66                  |

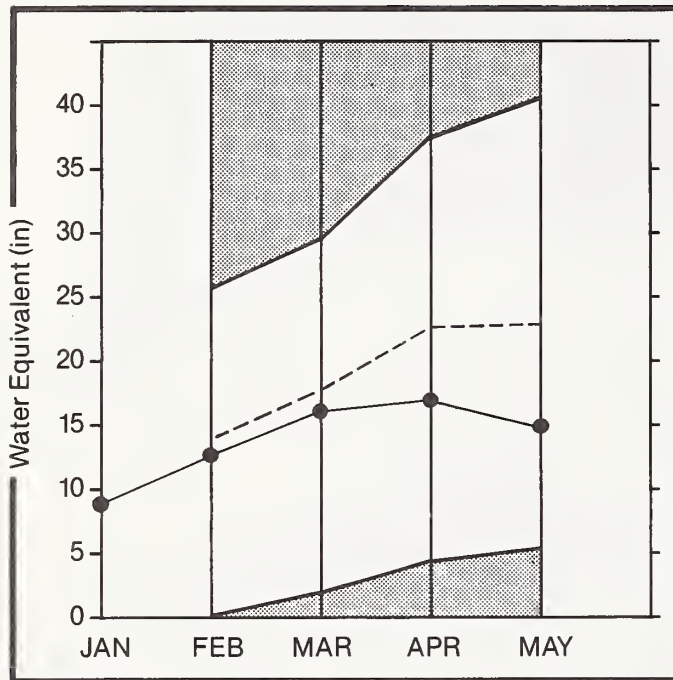
| RESERVOIR STORAGE (1000AF) |                  |                           |                           |                      | WATERSHED SNOWPACK ANALYSIS |                   |                            |                 |
|----------------------------|------------------|---------------------------|---------------------------|----------------------|-----------------------------|-------------------|----------------------------|-----------------|
| RESERVOIR                  | USEABLE CAPACITY | USEABLE STORAGE THIS YEAR | USEABLE STORAGE LAST YEAR | USEABLE STORAGE AVG. | WATERSHED                   | NO. COURSES AVG'D | THIS YEAR AS % OF LAST YR. | AS % OF AVERAGE |
| ROSS                       | 1404.1           | 773.2                     | 911.8                     | 644.4                | Skagit River                | 14                | 101                        | 72              |
| DIABLO RESERVOIR           | 90.6             | 85.3                      | 86.1                      | ---                  | Baker River                 | 9                 | 101                        | 66              |
| GORGE RESERVOIR            | 9.8              | 7.9                       | 7.8                       | ---                  | Cedar River                 | 0                 | 0                          | 0               |
|                            |                  |                           |                           |                      | Snoqualmie River            | 0                 | 0                          | 0               |
|                            |                  |                           |                           |                      | Skykomish River             | 2                 | 101                        | 62              |

1 - Reas. max. and reas. min. forecasts are for 5% and 95% exceedance levels and also (2) below.  
 2 - Corrected for upstream diversions or changes in reservoir storage.  
 The average is computed for the 1961-85 base period.







# OLYMPIC

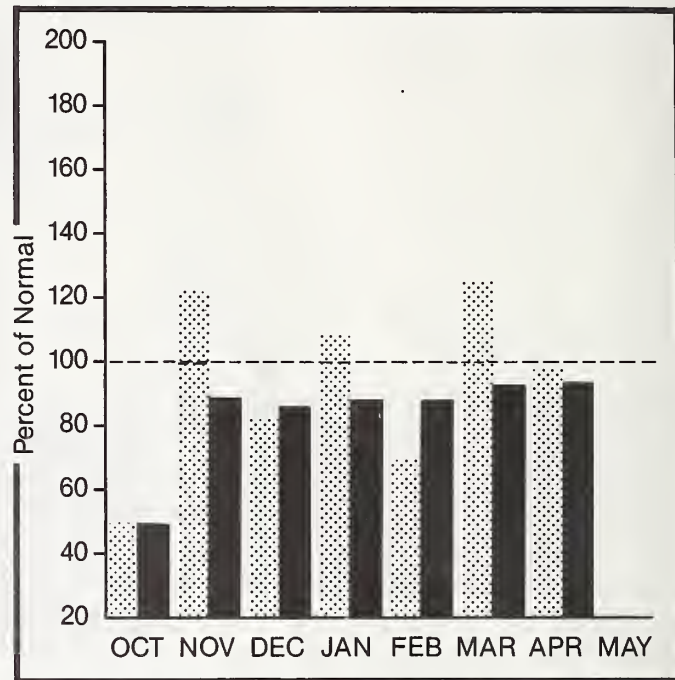
**Mountain snowpack\*** (inches)





\*Based on selected stations

Maximum  Average   
Minimum  Current 

**Precipitation\*** (percent of normal)



\*Based on selected stations

Monthly precipitation  Year to date precipitation 

## OLYMPIC PENINSULA RIVER BASINS

### WATER SUPPLY OUTLOOK:

April precipitation was 98% of average. May 1 forecasts of runoff for streams in the basin are for 81% of average on the Dungeness River. Runoff forecast is 80% on the Elwah River. Snow cover is 62% of normal, down from 85% last month, with Cox Valley snowcourse having 68 inches of snow and 33.2 inches of water content. The water year to date accumulation is 93% of normal. Temperatures in the basin were three degrees above average for April.

For more information contact your local Soil Conservation Service office.

# OLYMPIC PENINSULA RIVER BASINS

## STREAMFLOW FORECASTS

| FORECAST POINT              | FORECAST PERIOD | 25 YR.           | MOST                 | MOST                 | REAS.            | REAS.            | REAS.            | REAS.            |
|-----------------------------|-----------------|------------------|----------------------|----------------------|------------------|------------------|------------------|------------------|
|                             |                 | AVG.<br>(1000AF) | PROBABLE<br>(1000AF) | PROBABLE<br>(% AVG.) | MAX.<br>(1000AF) | MAX.<br>(% AVG.) | MIN.<br>(1000AF) | MIN.<br>(% AVG.) |
| DUNGENESS RIVER nr Sequim   | MAY-SEP         | 137.0            | 110.0                | 80                   | 130.0            | 95               | 90.0             | 66               |
|                             | MAY-JUL         | 109.0            | 88.0                 | 81                   | 110.0            | 101              | 70.0             | 64               |
|                             | MAY-JUN         | 97.0             | 79.0                 | 81                   | 95.0             | 98               | 65.0             | 67               |
| ELWHA RIVER nr Port Angeles | MAY-SEP         | 451.0            | 360.0                | 80                   | 440.0            | 98               | 280.0            | 62               |
|                             | MAY-JUL         | 363.0            | 290.0                | 80                   | 350.0            | 96               | 230.0            | 63               |

| RESERVOIR STORAGE (1000AF) |                  |           |                                 |            | WATERSHED SNOWPACK ANALYSIS |                      |                                       |    |
|----------------------------|------------------|-----------|---------------------------------|------------|-----------------------------|----------------------|---------------------------------------|----|
| RESERVOIR                  | USEABLE CAPACITY | THIS YEAR | XX USEABLE STORAGE<br>LAST YEAR | XX<br>AVG. | WATERSHED                   | NO. COURSES<br>AVG'D | THIS YEAR AS % OF<br>LAST YR. AVERAGE |    |
|                            |                  |           |                                 |            |                             |                      |                                       |    |
|                            |                  |           |                                 |            | Dungeness River             | 1                    | 137                                   | 53 |
|                            |                  |           |                                 |            | Morse Creek                 | 1                    | 131                                   | 81 |
|                            |                  |           |                                 |            | Elwha River                 | 1                    | 192                                   | 39 |

1 - Reas. max. and reas. min. forecasts are for 5% and 95% exceedance levels and also (2) below.

2 - Corrected for upstream diversions or changes in reservoir storage.

The average is computed for the 1961-85 base period.

DATA CURRENT AS OF: 5/ 7/87 7: 9: 6

# BASIN SUMMARY OF SNOW COURSE DATA MAY 1987

| SNOW COURSE           | ELEVATION | DATE    | SNOW DEPTH | WATER CONTENT | LAST YEAR | AVERAGE 1961-85 | SNOW COURSE              | ELEVATION | DATE    | SNOW DEPTH | WATER CONTENT | LAST YEAR | AVERAGE 1961-85 |     |
|-----------------------|-----------|---------|------------|---------------|-----------|-----------------|--------------------------|-----------|---------|------------|---------------|-----------|-----------------|-----|
| PENO BREILLE RIVER    |           |         |            |               |           |                 | COLOCKUM CREEK           |           |         |            |               |           |                 |     |
| BENTON MFAOOW         | 2370      | 4/29/87 | 0          | .0            | .0        | .0              | TROUGH #2                | PILLW     | 5310    | 5/01/87    | ---           | .0S       | .3              | 5.6 |
| BENTON SPRING         | 4920      | 4/29/87 | 4          | 1.6           | 2.8       | 15.4            | SQUILCHUCK CREEK         |           |         |            |               |           |                 |     |
| BOYER MOUNTAIN        | 5250      | 4/28/87 | 28         | 13.6          | 17.1      | 24.8            | STEMILT CREEK            |           |         |            |               |           |                 |     |
| BUNCHGRASS MEADOWS    | 5000      | 4/28/87 | 43.        | 18.8          | 15.6      | 29.2            | YAKIMA RIVER             |           |         |            |               |           |                 |     |
| BUNCHGRASS MOWPILLOW  | 5000      | 5/01/87 | ---        | 18.8          | --        | 26.4            | ANTANUM R.S.             | 3100      | 4/24/87 | 0          | .0            | .0        | .0              |     |
| HEART LAKE TRAIL      | 1800      | 5/01/87 | 6          | 2.7           | 11.2      | 17.4            | BIG BOULDER CREEK        | 3200      | 4/30/87 | 0          | .0            | --        | 8.7             |     |
| HOOOONO BASIN         | 6050      | 5/01/87 | 63         | 31.1          | 45.9      | 53.2            | ELEWETT PASS #2          | 4270      | 4/30/87 | 0          | .0            | .0        | 8.7             |     |
| HOOOONO CREEK         | 5900      | 5/01/87 | 54         | 27.2          | 36.8      | 49.3            | ELEWETT PASS#2PILLW      | 4270      | 5/01/87 | ---        | .0S           | .0        | 14.2            |     |
| LOOKOUT               | 5140      | 4/30/87 | 28         | 13.6          | 21.6      | 32.7            | BUMFING LAKE             | 3450      | 4/28/87 | 0          | .0            | 4.4       | 8.7             |     |
| NELSON                | CAN. 3100 | 4/30/87 | 1          | .6            | 1.3       | 7.2             | BUMFING LAKE (NEW)       | 3400      | 4/28/87 | 0          | .0            | 6.1       | 12.5            |     |
| SCHWEITZER BOWL       | 4800      | 5/01/87 | ---        | 13.5E         | .0        | 24.2            | CORRAL PASS PILLW        | 6000      | 5/01/87 | ---        | 32.4S         | 35.6      | 38.9            |     |
| SCHWEITZER RIGOE      | 6200      | 4/29/87 | 80         | 43.0          | 32.1      | 48.8            | 20804 IS NOT ON FILE     |           |         |            |               |           |                 |     |
| COLVILLE RIVER        |           |         |            |               |           |                 | FISH LAKE PILLW          |           |         |            |               |           |                 |     |
| KETTLE RIVER          |           |         |            |               |           |                 | GREEN LAKE PILLW         | 6000      | 5/01/87 | ---        | 15.7S         | 17.6      | 20.9            |     |
| BARNES CREEK CAN.     | 5300      | 4/27/87 | 25         | 9.3           | 15.9      | 20.5            | GROUSE CAMP PILLW        | 5380      | 5/01/87 | ---        | .6S           | 6.1       | 12.9            |     |
| BIG WHITE MTN CAN.    | 5510      | 5/02/87 | 22         | 9.3           | 20.8      | 19.9            | MORSE LAKE PILLW         | 5400      | 5/01/87 | ---        | 52.9S         | 42.8      | 55.3            |     |
| CARMI CAN.            | 4100      | 5/02/87 | 0          | .0            | .0        | 1.7             | STAMPEDE PASS PILLW      | 3860      | 5/01/87 | ---        | 34.2S         | 24.0      | 51.5            |     |
| FARRON CAN.           | 4000      | 4/29/87 | 4          | 1.0           | 5.8       | 10.4            | SASSE RIGOE PILLW        | 4200      | 5/01/87 | ---        | 14.5S         | 22.0      | 33.5            |     |
| MONASHEE PASS CAN.    | 4500      | 4/27/87 | 11         | 3.9           | 9.6       | 12.8            | TUNNEL AVENUE            | 2450      | 4/29/87 | 0          | .0            | 3.3       | 14.3            |     |
| TRAPPING CK LOW CAN.  | 3050      | 5/02/87 | 0          | .0            | .0        | .0              | WHITE PASS E.S.          | 4500      | 4/27/87 | 26         | 12.9          | 15.6      | 24.0            |     |
| TRAPPING CK UP CAN.   | 4460      | 5/02/87 | 0          | .0            | 1.3       | 5.6             | WHITE PASS ES PILLW      | 4500      | 5/01/87 | ---        | 10.3S         | 17.6      | 24.8            |     |
| OHAK LAKE, THIN LAKES |           |         |            |               |           |                 | ANTANUM CREEK            |           |         |            |               |           |                 |     |
| SPOKANE RIVER         |           |         |            |               |           |                 | ANTANUM R.S.             | 3100      | 4/24/87 | 0          | .0            | .0        | .0              |     |
| ABOVE BURKE           | 4100      | 4/30/87 | 8          | 2.8           | 8.0       | 18.6            | GREEN LAKE PILLW         | 6000      | 5/01/87 | ---        | 15.7S         | 17.6      | 20.9            |     |
| FOURTH OF JULY SUM    | 3200      | 5/01/87 | 0          | .0            | --        | .4              | HILL CREEK               |           |         |            |               |           |                 |     |
| LOOKOUT               | 5140      | 4/30/87 | 28         | 13.6          | 21.6      | 32.7            | HIGH RIGOE PILLW         | 4980      | 5/01/87 | ---        | .0S           | 5.5       | 20.8            |     |
| LOST LAKE             | 6110      | 4/29/87 | 77         | 35.5          | 42.9      | 60.1            | TOUCHET #2 PILLW         | 5530      | 5/01/87 | ---        | 7.6           | --        | --              |     |
| MOSQUITO RIGOE        | 5200      | 5/01/87 | ---        | 18.2E         | --        | 36.4            | LEWIS AND COWLITZ RIVERS |           |         |            |               |           |                 |     |
| SHERWIN               | 3200      | 4/29/87 | 0          | .0            | .0        | 4.6             | JUNE LAKE PILLW          | 3200      | 5/01/87 | ---        | 10.3S         | 7.0       | 24.8            |     |
| SUNSET                | 5540      | 5/01/87 | ---        | 18.0E         | --        | 32.8            | LONE PINE PILLW          | 3800      | 5/01/87 | ---        | 20.8S         | 17.3      | 45.1            |     |
| NEWMAN LAKE           |           |         |            |               |           |                 | PLAINS OF ABRAHAM ST     |           |         |            |               |           |                 |     |
| QUARTZ PEAK PILLW     | 4700      | 4/29/87 | 13         | 5.3           | --        | --              | POTATO HILL PILLW        | 4500      | 5/01/87 | ---        | 7.4S          | 18.3      | 27.3            |     |
| RAGGEO RIGOE          | 3330      | 5/01/87 | 0          | .0            | --        | --              | SHEEP CANYON PILLW       | 4050      | 5/01/87 | ---        | 12.9S         | 5.5       | 43.7            |     |
| OKANOGAN RIVER        |           |         |            |               |           |                 | SPENCER MOW PILLW        |           |         |            |               |           |                 |     |
| ABERDEEN LAKE CAN.    | 4300      | 4/30/87 | 0          | .0            | 1.8       | 1.7             | SPIRIT LAKE PILLW        | 3100      | 5/01/87 | ---        | .0S           | .0        | .0              |     |
| BLACKWALL PEAK CAN.   | 6370      | 4/28/87 | 62         | 31.4          | 30.7      | 36.3            | STRAWBERRY L. PILLW      | 3280      | 5/01/87 | ---        | 39.8S         | 37.4      | 53.0            |     |
| BRENOA MINE CAN.      | 4800      | 4/29/87 | 13         | 5.6           | 12.0      | 9.8             | SURPRISE LKS PILLW       | 4250      | 5/01/87 | ---        | 25.3S         | 36.7      | 55.6            |     |
| BROOKHERE CAN.        | 3200      | 5/01/87 | 7          | 3.2           | 2.2       | 5.1             | WHITE PASS E.S.          | 4500      | 4/27/87 | 26         | 12.9          | 15.6      | 24.0            |     |
| ENOKERY CAN.          | 6200      | 4/30/87 | 77         | 37.4          | 44.9      | 42.9            | WHITE PASS ES PILLW      | 4500      | 5/01/87 | ---        | 10.3S         | 17.6      | 24.8            |     |
| ESPERON CK. LO CAN.   | 4400      | 4/26/87 | 4          | 1.3           | 6.8       | 8.9             | WHITE RIVER              |           |         |            |               |           |                 |     |
| ESPERON CK. MIO CAN.  | 4690      | 4/26/87 | 11         | 4.1           | 9.5       | 11.9            | CORRAL PASS PILLW        | 6000      | 5/01/87 | ---        | 32.4S         | 35.6      | 38.9            |     |
| ESPERON CK. UP CAN.   | 5410      | 4/26/87 | 21         | 8.3           | 12.7      | 17.5            | MORSE LAKE PILLW         | 5400      | 5/01/87 | ---        | 52.9S         | 42.8      | 55.3            |     |
| GREYBACK RES CAN.     | 5120      | 4/29/87 | 0          | .0            | 9.2       | 7.7             | GREEN RIVER              |           |         |            |               |           |                 |     |
| HAMILTON HILL CAN.    | 4890      | 4/28/87 | 21         | 8.0           | 10.2      | 12.6            | COUGAR MTN. PILLW        | 3200      | 5/01/87 | ---        | .0S           | 1.6       | 20.8            |     |
| HARTS PASS PILLW      | 6500      | 5/01/87 | ---        | 38.8S         | 46.5      | 56.7            | GRASS MOUNTAIN #2        | 2900      | 4/30/87 | 0          | .0            | .0        | --              |     |
| ISINTOK LAKE CAN.     | 5500      | 4/25/87 | 7          | 2.4           | 7.0       | 6.3             | LESTER CREEK             | 3100      | 4/30/87 | 0          | .0            | 11.8      | --              |     |
| LOST HORSE MTN CAN.   | 6300      | 4/30/87 | 12         | 3.7           | 11.0      | 10.3            | LYNN LAKE                | 4000      | 4/30/87 | 2          | .8            | 5.5       | 20.7            |     |
| MCCULLOCH CAN.        | 4200      | 4/30/87 | 0          | .0            | .7        | 2.4             | SAWHILL RIDGE            | 4700      | 4/30/87 | 41         | 18.4          | --        | --              |     |
| MISSEZULA MTN CAN.    | 5090      | 4/27/87 | 13         | 5.3           | 9.5       | 7.0             | STAMPEDE PASS PILLW      | 3860      | 5/01/87 | ---        | 34.2S         | 24.0      | 51.5            |     |
| MISSION CREEK CAN.    | 5800      | 4/30/87 | 24         | 10.2          | 22.8      | 21.8            | THIN CAMP                | 4100      | 4/30/87 | 29         | 14.2          | 15.0      | --              |     |
| MONASHEE PASS CAN.    | 4500      | 4/27/87 | 11         | 3.9           | 9.6       | 12.8            | CEGAR RIVER              |           |         |            |               |           |                 |     |
| MT. KOEAW CAN.        | 5900      | 4/26/87 | 25         | 8.7           | 13.0      | 13.3            | SNOQUALMIE RIVER         |           |         |            |               |           |                 |     |
| OYAMA LAKE CAN.       | 4400      | 4/27/87 | 0          | .0            | 2.2       | 3.1             | SKYKOMISH RIVER          |           |         |            |               |           |                 |     |
| POSTILL LAKE CAN.     | 4500      | 4/28/87 | 0          | .0            | 6.9       | 6.4             | STEVENS PASS PILLW       | 4070      | 5/01/87 | ---        | 25.9S         | 28.2      | 41.3            |     |
| SALMON MOWS PILLW     | 4500      | 5/01/87 | ---        | .0S           | .0        | 7.4             | STEVENS PASS SAND SO     | 3700      | 4/29/87 | 40         | 19.0          | 16.1      | 31.3            |     |
| SILVER STAR MTN CAN.  | 6000      | 4/26/87 | 50         | 22.9          | 30.2      | 29.7            | SKAGIT RIVER             |           |         |            |               |           |                 |     |
| SUMMERLAND RES CAN.   | 4200      | 4/25/87 | 3          | 1.1           | 6.6       | 6.3             | BEAVER CREEK TRAIL       | 2200      | 4/29/87 | 0          | .0            | .0        | 4.9             |     |
| SUNOAY SUMMIT CAN.    | 4300      | 4/24/87 | 0          | .0            | .0        | .8              | BEAVER PASS              | 3680      | 4/28/87 | 47         | 22.7          | 17.7      | 29.3            |     |
| TROUT CREEK CAN.      | 4690      | 4/27/87 | 2          | .7            | 4.1       | 4.8             | BROWN TOP                | AM 6000   | 4/28/87 | 121        | 55.0          | 56.2      | 63.3            |     |
| VASEUX CREEK CAN.     | 4600      | 4/27/87 | 0          | .0            | 3.7       | 3.0             | DEVILS PARK              | 5900      | 4/28/87 | 84         | 38.0          | 39.2      | 46.2            |     |
| WHITE ROCKS MTN CAN.  | 6000      | 5/04/87 | 32         | 13.8          | 19.6      | 22.4            | FREEZEOUT CK. TRAIL      | 3500      | 4/29/87 | 5          | 1.7           | 2.1       | 7.8             |     |
| METHOW RIVER          |           |         |            |               |           |                 | GRANITE CREEK            |           |         |            |               |           |                 |     |
| HARTS PASS PILLW      | 6500      | 5/01/87 | ---        | 38.8S         | 46.5      | 56.7            | HARTS PASS PILLW         | 6500      | 5/01/87 | ---        | 38.8S         | 46.5      | 56.7            |     |
| SALMON MOWS PILLW     | 4500      | 5/01/87 | ---        | .0S           | .0        | 7.4             | KLESILKWA CAN.           | 3710      | 4/24/87 | 0          | .0            | .0        | 8.3             |     |
| CHELAN LAKE BASIN     |           |         |            |               |           |                 | LIGHTNING LAKE CAN.      |           |         |            |               |           |                 |     |
| CLOUDY PASS           | AM 6500   | 4/28/87 | 72         | 32.4          | --        | --              | LYMAN LAKE PILLW         | 4000      | 4/24/87 | 23         | 8.8           | 8.5       | 11.5            |     |
| LYMAN LAKE PILLW      | 5900      | 5/01/87 | ---        | 55.5S         | 52.4      | 67.5            | HEADHUS CABIN            | 1900      | 5/01/87 | ---        | 55.5S         | 52.4      | 67.5            |     |
| LITTLE MOWS           | AM 5280   | 4/28/87 | 70         | 31.5          | --        | --              | NEW HOZOMEEN LAKE        | 2800      | 4/29/87 | 0          | .0            | .0        | 6.0             |     |
| MIRROUR LAKE PILLW    | 5600      | 5/01/87 | ---        | 35.7S         | 29.3      | 33.5            | RAINY PASS PILLW         | 4780      | 5/01/87 | ---        | 36.0S         | 36.6      | 45.4            |     |
| PARK CK RIGOE PILLW   | 4600      | 5/01/87 | ---        | 30.9S         | 35.5      | 39.9            | THUNDER BASIN            | 2400      | 4/29/87 | 36         | 15.6          | 9.8       | 22.8            |     |
| RAINY PASS PILLW      | 4780      | 5/01/87 | ---        | 36.0S         | 36.6      | 45.4            | BAKER RIVER              |           |         |            |               |           |                 |     |
| ENTIAI RIVER          |           |         |            |               |           |                 | OUNGENESS RIVER          |           |         |            |               |           |                 |     |
| WENATCHEE RIVER       |           |         |            |               |           |                 | OER PARK                 |           |         |            |               |           |                 |     |
| BLEWETT PASS #2       | 4270      | 4/30/87 | 0          | .0            | .0        | 8.7             | MORSE CREEK              | 5200      | 4/29/87 | 24         | 11.1          | 8.1       | 21.1            |     |
| BLEWETT PASS#2PILLW   | 4270      | 5/01/87 | ---        | .0S           | .0        | 14.2            | COX VALLEY               | 4500      | 4/26/87 | 68         | 33.2          | 25.4      | 40.8            |     |
| LYMAN LAKE PILLW      | 5900      | 5/01/87 | ---        | 55.5S         | 52.4      | 67.5            | ELMHA RIVER              |           |         |            |               |           |                 |     |
| STEVENS PASS PILLW    | 4070      | 5/01/87 | ---        | 25.9S         | 28.2      | 41.3            | HURRICANE                | 4500      | 4/28/87 | 20         | 9.4           | 4.9       | 23.9            |     |
| STEVENS PASS SAND SO  | 3700      | 4/29/87 | 40         | 19.0          | 16.1      | 31.3            |                          |           |         |            |               |           |                 |     |



## CONSERVE YOUR IRRIGATION WATER

Can irrigators use less water and get good yields? We think so. With energy costs on an upward spiral and water shortages likely, we offer these water saving ideas to irrigators.

Consider ditch lining or gated pipe. This will reduce the 10-90% loss which occurs in earth ditches.

Keep ditches clean and free from weeds, sediment or other debris, which can slow water velocity, affect delivery rate, and increase evaporation.

Make sure head gates, drop structures, and pipe inlets are operational. A washed out structure is water lost.

Inspect ditch banks for rodent damage. Rodent holes cause leakage or failures.

Make sure sprinkler nozzles are not worn or leaky. Check pipe connections and valves to prevent leaks.

Operate sprinklers at recommended pressure to effectively use available water.

Maintain your pump at peak efficiency to save energy.

### BETTER WATER MANAGEMENT

Better water management may require more labor. It may require changing a head of water in the middle of the night. But it will be worth it. You should:

Measure your water to determine how much is applied.

Consider alternate row irrigation for crops planted in furrows.

Plan short runs. Match stream size and velocity to soil intake rate and capacity.

Catch and reuse tail water where possible.

Under irrigate the lower end of the field to stretch your water.

When water is short, consider eliminating that last irrigation.

Soil Conservation Service personnel can:

Help plan and design new irrigation systems or evaluate existing ones. Provide technical assistance for land leveling, pipeline installation, and other practices.

### KNOW YOUR SOILS

Soil absorbs irrigation water at a given rate. This varies with each soil type. Some crops require more water than others. Check soil moisture by spade, probe, or moisture meter. Or use the "feel" method.

### WHEN IRRIGATION IS NEEDED SOIL WILL FEEL AND ACT THIS WAY

| <u>Soil Texture</u> | <u>A handful of soil will</u>                             |
|---------------------|---|
| Coarse              | Tend to stick together slightly, but will not form a ball |
| Medium              | Be crumbly, but will form a ball                          |
| Fine                | be pliable, and will form a ball.                         |

If you have a conservation plan on your farm, or if the soil in your area has been mapped, the Soil Conservation Service can crosscheck soil type and irrigation data and provide you with the water holding capacity of your soil for a given crop.



# IMPORTANT NOTICE

## WATER SUPPLY OUTLOOK FOR WASHINGTON

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